

Health-Seeking Behaviour in Pregnancy and Childbirth in Kep, Cambodia

Okrasa and Pong Tak Communes, Kep Province

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Executive Summary

The following report details the results of the Maternal Health-Seeking Behaviour Survey performed by the Centre for International Health (CIH) in the province of Kep, Cambodia. The CIH is a Canadian academic body supported by the University of Toronto that is working in conjunction with the Cambodian Ministry of Health (MoH) to implement a primary health care project in Kep. Maternal health is an integral component of primary health care, and to this end, a survey was conducted to determine baseline health-seeking behaviour among women in pregnancy and childbirth. An introductory study of maternal health knowledge, attitudes, and practice (KAP) was also included.

The Maternal Health-Seeking Behaviour Survey consists of a semi-structured questionnaire with four parts pertaining to demographics, health-seeking behaviour, most recent birth experience, and breastfeeding and birth spacing knowledge and practices. The survey was conducted in June and July of 2004 in the communes of Okrasa and Pong Tak, two of the three community health centre catchment areas in Kep. Women with children age five years or younger were eligible to be interviewed. A total of 190 interviews were tabulated. Results show several gaps in care and room for improvement.

In terms of antenatal care (ANC), about half of all women paid at least one ANC visit to a trained provider in their last pregnancy. Those who received ANC averaged 2.4 visits, with the first visit occurring at an average of 5.4 months gestation. Women preferred the hospital over the health centre for ANC.

When asked where they delivered their last child, most women reported having given birth at home with a traditional birth attendant (TBA), consistent with practices in the country as a whole. Many women explained this choice solely by saying they are healthy enough, or it is their habit or custom, both indications that they view home births with untrained attendants as normal and appropriate. Many other women, however, said that they cannot afford anything else. Most women who did not use a TBA employed a private health care worker for their most recent delivery. Few women delivered in public medical facilities. Safety and skill were reasons given by almost all women who choose public or private care, even though private HCWs are unregulated and may be less trained than their public counterparts.

The health centres were only five years old at the time of the interview, and many women know little about the services they offer. In fact, 46% have never once visited the health centre. A large proportion of women do not know about antenatal care, free birth spacing, or set user fees.

The survey did not find any maternal mortalities in the Okrasa or Pong Tak communes in the past 5 years. Additional surveys using different methods would be useful to verify this information.

The maternal health KAP questions revealed several important results. Although almost all women breastfeed, most do not start immediately after birth. Most women do not give their infant colostrum, but give boiled sugar water instead. Exclusive breastfeeding in the first six months of life is rare. Women have good knowledge of the basics of birth spacing, but few use them, even though many say they want to stop having children.

Introduction

The Centre for International Health (CIH) at the University of Toronto, Canada, is an organization based out of the Faculty of Medicine that focuses on research, service, and education towards improving the health of the world's poor.¹ In 2002, the CIH began to work in Kep, Cambodia. The CIH is currently developing a primary health care project in partnership with the National Centre for Health Promotion (NCHP) and the Operational District Director of Health (OD) of the Kep municipality.¹ The goal of the CIH is to work within the framework of the plans and policies of the Cambodian Ministry of Health (MoH) to strengthen primary care service and delivery in Kep.

Maternal child health (MCH) is an important component of primary health care. In fact, MCH has been slated as one of the three main priorities of the Cambodian MoH National Primary Health Plan, alongside HIV prevention/treatment and food security. MCH is also an important focus for the primary health care project in Kep as the CIH endeavors to support national plans and policies and the local OD office in implementing them.

This report forms part of the contribution from community members to the baseline data needed to implement an MCH plan within the CIH primary care project. The foremost objective of the survey was to assess women's health-seeking behaviours in pregnancy and childbirth in the Okrasa and Pong Tak communes of the Kep Operational District. An introductory survey of breastfeeding and birth spacing knowledge, attitudes, and practice (KAP) was also included.

Background

Kep is province in southwest Cambodia with a population of approximately 34,000 people. Kep consists of 18 villages, which are contained in six administrative districts (communes).¹ Most people who live in Kep work as subsistence farmers or fishers. Few people have electricity, clean water, or safe sewage disposal. Health care in Kep is under the direction and policies of the Operational District Office and the MoH. The region is served by one referral hospital and three community health centres in the communes of Okrasa, Pong Tak, and Angkoul.

The Okrasa and Pong Tak health centres, designed to be the first point of contact for health care in their respective communes, were opened in 1999.² The centres are

staffed with a director, two nurses, two midwives, and medic/physician assistants. The staff have varying levels of training, including private apprenticeships, government approved programs of one month to three years, war-time training, and education from China or Vietnam. Senior staff members are paid a maximum salary of 10 USD per month, and junior staff members receive less.² Many staff members supplement their small income by working privately. Beginning in February 2004, a fee schedule was introduced to supplement staff income and reduce corruption and bribery.

The following survey interviewed women in the catchment areas of the Okrasa and Pong Tak health centres. Okrasa serves a population of 6,434, and Pong Tak serves a population of 8,905.²

Definitions

The following definitions apply to the terms used in this report:

- *Private health care worker (HCW)*: an unregulated provider of health services outside the public system. Private HCWs may or may not be trained in their field of practice, and they may work concurrently in the public system. Private HCWs include, but are not restricted to, midwives, doctors, nurses, and pharmacists, traveling medicine salespeople, and shopkeepers in the market who sell medication. Private HCWs usually offer allopathic remedies and care; in this survey, private HCWs do not include Khmer traditional healers or traditional birth attendants.
- *Private clinic*: place of practice of a private HCW. This may be a pharmacy in the market and/or the private HCW's home.
- *Traditional Birth Attendant (TBA)*: a community member, often an older women, who assists births of women in her area for a small fee. TBAs are unregulated, and their skills vary widely. Most TBAs have never had formal education, but they may have many years of experiential knowledge.
- *Traditional home remedies*: a collection of culturally specific practices that a person may employ on themselves or a family member to treat common illnesses. The most commonly mentioned traditional home remedy in this study was coining, a practice in which the serrated edge of a coin is scraped across the skin as treatment for various internal maladies.

- *Traditional healer*: a person who, by profession, applies culturally specific knowledge, skills, and practices towards health maintenance and the prevention, diagnosis, and treatment of physical or mental illness. Traditional healers are not regulated and most have not had formal training.
- *Antenatal care*: health care of a woman during pregnancy by a trained professional. The MoH National Maternal and Child Health Center clearly defines the recommended content of antenatal care in Cambodia, including medical history, physical exam, lab work, health counseling, and tetanus toxoid immunization (Safe Motherhood, 1997). Women in this survey, however, were simply asked whether they received a “pregnancy check-up” from a private or public health care worker. Sources of general care and advice during pregnancy were not considered antenatal care and were assessed with another question. Also, women who received only a tetanus toxoid vaccination were not considered to have received antenatal care. Otherwise, it is beyond the scope of this survey to determine the extent that antenatal care in Kep conforms to national standards.

Methodology

The Questionnaire: The Kep Maternal Health-Seeking Behaviour Survey was designed as part of the CIH Primary Care project to collect pre-intervention information on health-seeking behaviour. It was validated by the CIH field researcher (a University of Toronto medical student), the field supervisor (a Registered Midwife), and the translator (a member of the CIH Cambodian staff). Questions were adapted from a previous survey on antenatal health seeking behaviour by MOVIMONDO Cambodia in the Maung Russay Operational District, and new questions were added to reflect the goals and objectives of the CIH Primary Care project.³ The questionnaire was pilot tested and refined at a community clinic in Okrasa before implementation. Originally, the questionnaire had three parts focusing on health-seeking behaviour in pregnancy and childbirth. A fourth part was added after data collection began to expand the scope of the questionnaire to include an introductory survey on maternal health KAP, namely, breastfeeding and birth spacing knowledge and practices. See Appendix A for the Kep Maternal Health-Seeking Behaviour Survey in English and Khmer.

Part A collected demographic characteristics including home type, educational level, parity, abortion rates, and childhood mortality. The type of home (mud, thatch, wood, or brick) was used as a proxy for socioeconomic status, with mud being the lowest status and brick being the highest. Education level was stratified into five layers corresponding to approximate literacy levels, based on findings that a minimum of 4 years of education are required for most Cambodian women to achieve full literacy (as defined by being able to read a simple sentence in Khmer).⁴ Education levels were defined as: no education (illiterate), 1-3 years (functionally illiterate), 4-6 years, (literate, some primary education), 7-12 years (literate, some secondary education), and >12 years (post secondary education).

Part B examined health-seeking behaviour during pregnancy. The questions focused on knowledge and usage of the health centres, so additional questions on health-seeking behaviour for sickness were included to assess general usage of the health centres. Women were also asked about travel times and method of transportation to the health centre to assess their degree of access to primary care.

Part C recorded the subjects' attitudes and practices regarding the birth of her last child, including where she gave birth, who was in attendance, and her reasons for her choice of birthplace and caregiver.

Part D assessed breastfeeding and birth spacing knowledge and practices.

Selection Criteria: Only female residents of Okrasa or Pong Tak communes with a child five years of age or younger were eligible to be interviewed.

Sampling: Interviews were conducted in all the villages of the Okrasa and Pong Tak communes to maximize regional representation. More time was spent in the largest villages, Domnarkchombok and Okrasa, to improve proportional representation. Four days were spent in each of Domnarkchombok and Okrasa, two days were spent in Phnom Leav, and one day was spent in each of O Doung, Chom Kabey, Prey Takouy, and Rhoneas. To ensure a geographically representative sample in Domnarkchombok and Okrasa villages, each day of data collection was spent progressively farther from the health centre, which is situated on the main road. As random sampling was not feasible, interviews

were conducted in clusters of twelve to seventeen samples per day. Participants were selected by the Red Cross volunteers or health centre staff, who guided the interviewers to homes with women who fit the selection criteria and were within walking distance of the starting point that day.

Administration of the Questionnaire: Field research was conducted over a two-week period in June and July, 2004. One hundred and ninety-one women in the two villages of the Okrasa commune (Okrasa, Domnarkchombok) and the five villages of the Pong Tak commune (O Doung, Chom Kabey, Prey Takouy, Rhoneas) were interviewed. All women gave informed consent. See Appendix A for consent form. In Okrasa commune, 119 interviews were conducted by the researcher and a translator accompanied by area Red Cross volunteers. In Pong Tak commune, 72 interviews were conducted by the translator accompanied by Pong Tak Health Centre staff. One interview was removed from the data set because age was missing, leaving a total of 190 responses.

Data Recording and Analysis: Data from the interviews conducted by the field researcher were recorded in a logbook, and data from the interviews conducted by the translator were recorded on individual copies of the questionnaire. All data entry and analysis were conducted by the field researcher using Microsoft Excel.⁵

Results

The following results were compiled from the 22 questions/sections of the questionnaire. N=190 unless otherwise specified.

Part A: Demographics

1. Village

Most respondents lived in Okrasa commune, but representatives were present from all seven villages in the Okrasa and Pong Tak communes (See Table 1.1).

Table 1.1

Place of residence	
Okrasa	119
Domnarkchombok	63

Pong Tak	Okrasa	56
		71
	Chom Kabey	12
	O Doung	12
	Phnom Leav	24
	Prey Takouy	12
	Rhoneas	11
Total		190

2. Age

The mean age of the women in the sample was 30.1, with a range of 18 to 50 years. See Table 2.1 for percentages of women in four age categories.

Table 2.1

Age		
15-20 years	9	5%
21-34	125	66%
35-45	52	27%
>45	4	2%

3. Marital status

Almost all women were married (See Table 3.1).

Table 3.1

Marital Status		
Married	181	95%
Divorced or Separated	7	4%
Widowed	2	1%
Single	0	0%

4. Education level

See Table 4.1 and Figure 1 in Appendix E for percentages of women in each of five predetermined educational categories. The mean educational level was 4.1 years.

Table 4.1

Education level		
no education	30	16%
1-3 years (partially literate)	50	26%
4-6 years (literate, some primary school)	72	38%
7-9 years	23	12%
10-12 years	11	6%
7-12 years (some secondary school)	34	18%
> secondary school	1	1%

5. Type of home

Almost half of women lived in wood homes, while one quarter lived in thatch, and one quarter lived in brick houses (See Table 5.1).

Table 5.1

Type of House		
Mud	9	5%
Thatch	50	26%
Wood	80	42%
Brick	49	26%
No response	2	1%

6. Parity

Mean number of children per woman was 3.1. The mean age of the youngest child was 28.7 months. A few women were pregnant at the time of the interview (See Table 6.1).

The mean number of children per woman increased as maternal age increased. In the two largest age groups, the number of women reporting more than 3 children rose from 19% for 21-34 year olds to 79% for 35-45 year olds (See Table 6.2). The average number of children per woman older than 35, who are more likely to be nearing their reproductive capacity, was 5.1.

Table 6.1

Currently pregnant		
Yes	12	6%
No	178	94%

Table 6.2

Parity by Age	15-20 years	21-34 years	35-45 years	>45 years
1 to 3 children	9	100%	102	82%
4 to 6	0	0%	22	18%
7 to 9	0	0%	1	1%
>9	0	0%	0	0%
Totals	9	125	52	4

7. Spontaneous abortions and childhood mortality

One fifth of women (21%) have experienced at least one loss in pregnancy or the death of a child (See Table 7.1). Proportions of mortalities separated by age at death are listed in Table 7.2. Infant and child death rates are listed in Table 7.3. The women gave a variety of explanations for their losses, some of which are recorded in Appendix B.

Table 7.1

At least one loss of pregnancy/childhood mortality		
Yes	40	21%
No	148	78%
No response	1	1%

Table 7.2

Age at death, all mortalities		
0-21 weeks gestation	13	21%

22 weeks gestation to birth	5	8%
live birth to 30 days post-partem	17	27%
31 days post-partem to one year	13	21%
live birth to one year	30	48%
live birth to five years	36	58%
older than 5 years	4	6%
unknown age	4	6%
Total=	62	

Table 7.3

Infant and child death rates as percentage of total live births		
neonatal (live birth - 30d post-partem)	17	2.69%
post-neonatal (31d post-partem - 1yr)	13	2.06%
infant (live birth - 1yr)	30	4.75%
under five (live birth - 5yrs)	36	5.70%
unknown age	4	0.63%
Total deaths	62	
Total live births	632	

8. Therapeutic abortions

Nine women who reported having one or more therapeutic abortions (TAs) (See Table 8.1). Seven women had one TA performed between 6-8 weeks gestation, and one woman had two TAs (gestation unknown), all performed by private health care workers in their facilities. One woman obtained a TA at 20 weeks gestation from a TBA, who "hit her stomach" to induce death of the fetus.

Table 8.1

Number of Abortions per Woman		
0 abortions	181	95%
1 abortion	8	4%
2 abortions	1	1%

Part B: Health-Seeking Behaviour

9. Sources of care and advice in sickness

When asked where they would seek help if they or their child were sick, most women (62%) would consult a private clinic, and 56% said that they would use traditional home remedies (See Table 9.1 and Figure 2, Appendix E). However, when the interviewers began to list options instead of leaving the question open-ended, the rate of response for traditional home remedies increased to 93%. Thus, almost all women practice some form of traditional medicine in the home. Total in Table 9.1 exceeds 1005 because many women gave multiple answers.

More than half of women in Okrasa had been to the health centre at least once (61%) versus only 37% of women in Pong Tak, as seen in Table 9.2 and Figure 3 in Appendix E.

Table 9.1

Who do you consult when you or your child are sick?		
Private clinic	117	62%
Traditional home remedies*	107	56%
Health centre	44	23%
Public hospital	24	13%
Traditional healer	4	2%
Other	3	2%
No response	1	1%

Table 9.2

Ever been to the health centre	Okrasa		Pong Tak		Total	
Yes	73	61%	26	37%	99	52%
No	44	37%	43	61%	87	46%
No response	1	1%	2	3%	3	2%

10. Sources of care and advice in most recent pregnancy and delivery

See Table 10.1 and Figure 4 in Appendix E for sources women reported for antenatal care and advice. Totals in Table 10.1 exceed 100% because many women gave more than one answer. Table 10.2 stratifies the women by the number of responses they gave.

Table 10.1

Sources of antenatal care and advice		
Family/friends/neighbours	105	55%
Public hospital staff	66	35%
Health centre midwife	42	22%
No one	41	22%
Private health care worker	25	13%
TBA	14	7%
No response	3	2%

Table 10.2

Number of sources women consulted for antenatal care		
0 sources	41	22%
1 source	73	38%
2 sources	66	35%
3 sources	7	4%
no response	3	2%

11. Number of women who received antenatal care from a trained professional

Sixty-four women reported getting a pregnancy check-up at the hospital, and 28 women visited the health centre. In total, 48% of women received antenatal care from the public system (See Table 11.1 and Figures 5-6 in Appendix E).

Women who received antenatal care made an average of 2.4 visits. The mean month of first antenatal visit was 5.4. Half of women interviewed in Okrasa (50%) and 47% of women living in Pong Tak received antenatal care.

Table 11.1

Did you get a pregnancy check-up in the hospital or health centre?		
Yes	92	48%
No	97	51%
private check-up	17	9%
No check-up	80	42%
No response	1	1%

12. Transportation to the health centre

See Tables 12.1-12.2 and Figures 7-10 in Appendix E for types of transportation used to access the health centre and transportation times.

Table 12.1

Transportation to health centre	normally		in an emergency	
Bicycle	71	37%	11	6%
Walk	39	21%	17	9%
Motodup	49	26%	113	59%
Moto	30	16%	46	24%
Would contact a neighbour/private HCW			2	1%

Table 12.2

Travel time to health centre	normally		in an emergency	
0-14 min	60	32%	99	52%
15-29 min	79	42%	66	35%
30-44 min	45	24%	23	12%
45-59 min	0	0%	0	0%
>=60 min	6	3%	0	0%
No time given			2	1%

Part C: Most Recent Birth Experience

13. Choice of delivery location and caregiver

Most women (82%) chose to give birth at home (See Table 13.1). Sixty-nine percent gave birth at home with a traditional birth attendant, 13% gave birth at home with a private midwife, 12% gave birth in a private clinic, and 6% gave birth in a public hospital. No women gave birth in a health centre. By commune, 78% of women interviewed in Okrasa and 55% of women interviewed in Pong Tak gave birth at home with a traditional birth attendant. Also, 34% of women in Pong Tak and 19% of women in Okrasa accessed private care, whether at home or in a clinic.

Table 13.1

Choice of delivery location and caregiver		
Home with TBA	132	69%
Home with private HCW	24	13%
Private clinic	23	12%
Public hospital	11	6%
Health centre	0	0%

Total at home	156	82%
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14. Cost of delivery

Average cost of delivery in Cambodian riels and American dollars are listed in Tables 14.1, 14.2, and Figure 12 in Appendix E.

Table 14.1

Delivery costs	Range in riels	Range in USD	Average cost in riels	Average cost in USD
Home w/ TBA	5,000-50,000	1.25-12.50	16,000	4
Home w/ private HCW	20,000-280,000	5.00-70.00	87,000	21.75
Public hospital	10,000-400,000	2.50-100.00	119,000	29.75
Private clinic	20,000-400,000	5.00-100.00	175,000	43.75

Table 14.2

Also paid in kind	(non response rate)		
Home w/ TBA	88	67%	2%
Home w/ private HCW	0	0%	13%
Public hospital	2	18%	9%
Private clinic	0	0%	30%

15. Reasons for choice of delivery location and caregiver

Women gave the following reasons for their choice of delivery location and caregiver, whether it be at home with a TBA, at home with a private HCW, at a private clinic, or at the public hospital (See Tables 15.1-15.4 and Figures 13-15 in Appendix E.). Totals exceed 100% because some women gave more than one reason. For other reasons women gave and additional comments, see Appendix C.

Of the 132 women who gave birth at home with a TBA, 48 (36%) gave habit/custom and/or being healthy as their only reason for their choice of birth place and caregiver (Table 15.1, Figure 13). Of the 24 women who gave birth at home with a private HCW, most (67%) cited the ability of their family to care for them or their children as a reason to stay home, and skill/safety (42%) as a reason to employ a private HCW (Table 15.2, Figure 14). Of the 23 women who gave birth at a private clinic, the most popular reason given was skill and safety of the practitioner (61%) (Table 15.3, Figure 14). Several women also cited the convenience of a private clinic, especially the availability of "three meals a day." Table 15.4 lists the most common reasons women gave for their choice of using private services for delivery, stratified by commune. Only eleven women (6% of all women interviewed) gave birth in a public hospital. All the women gave better safety and confidence in the skill of the hospital staff as reasons for their choice (Table 15.5, Figure 15). Two women said that it was their custom. One woman tried to give birth at home but was sent to the Takeo hospital by the private HCW when the delivery became too difficult.

Table 15.1

Reasons for delivery at home w/ TBA		
I was healthy/no problems	61	46%
No money/too poor/low cost	57	43%

habit/custom	40	30%
So my family could take care of me/my children	12	9%
planned for hospital/clinic but had no time/night birth	5	4%
hospital/health centre too far away	5	4%
caregiver is related	3	2%
none of the above	6	5%

Table 15.2

Reasons for delivery at home w/ private HCW		
So my family could take care of me/my children	16	67%
"Good" practitioner/more skilled/more safe	10	42%
I was healthy/no problems	9	38%
No money/too poor/low cost	7	29%
Good reputation/popular	7	29%
habit/custom	4	17%
planned for hospital/clinic but had no time/night birth	4	17%
extra precautions for first child	2	8%

Table 15.3

Reasons for delivery at private clinic		
"Good" practitioner/More skilled/safer	14	61%
convenience and service (eg served food)	7	30%
Good reputation/popular	6	26%
caregiver is related	4	17%
extra precautions for first child	3	13%
habit/custom	1	4%
So my family could take care of me/my children	1	4%

Table 15.4

Reasons for using private services for delivery	Okrasa	Pong Tak
skill/safety	10	13
reputation/popularity	8	5
convenience/service	1	6
extra precaution for first child	5	0
low cost	2	5
Total number of women who used private services	23	24

Table 15.5

Reasons for delivery at public hospital		
"Good" practitioner/More skilled/safer	11	100%
extra precautions for first child	2	18%
habit/custom	2	18%
So that my family could take care of me/my children	1	9%

16. Worries during pregnancy

Women's most common worries during pregnancy are listed in Table 16.1.

Table 16.1

Worries during pregnancy		
Not worried	77	41%
Difficult/dangerous delivery	59	31%
Infant deformities	23	12%
That I will die giving birth	22	12%
My infant will become sick or die	11	6%
I am too poor to care for my child	7	4%

16. Estimates of post-partem hemorrhage

Forty-four women (23%) reported bleeding “a lot” after giving birth (See Table 17.1). Seventeen of these women reported feeling fatigued after the birth, and twelve complained of fatigue and vertigo.

Table 17.1

Did you bleed a lot after giving birth?		
Yes	44	23%
No	142	75%
No response	4	2%

18. Estimates of maternal mortality

Only three women knew of another woman who had died in childbirth, and each mentioned a different woman. (See Appendix D.) According to the women, the deaths occurred 5-6 years ago in the region, and all three were caused by post-partem hemorrhage.

Part D: Breastfeeding and Birth Spacing Knowledge and Practice

Sample size for the remaining data is 112 unless otherwise specified. Forty-one respondents live in Okrasa, and 71 respondents live in Pong Tak.

19. Breastfeeding onset and duration

Almost all women (98%) reported breastfeeding their youngest child. Mean breastfeeding duration was 27.2 months. Most women began to breastfeed two or three days after birth (49%) (See Table 19.1 and Figure 17 in Appendix E). Only one quarter (25%) of women began to breastfeed within a few hours of birth.

Table 19.1

Breastfeeding onset		
1-2hr	28	25%
overnight/<24hr	21	19%
2 days	13	12%
3 days	41	37%
4-7 days	6	5%
did not breastfeed	2	2%
no response	1	1%

20. Exclusive breastfeeding in the first 6 months of life, n=110

Only 15% of women practiced exclusive breastfeeding in the first six months of life (See Table 20.1 and Figure 18 in Appendix E). (Sample size for Table 20.1 is 110, i.e. all women who reported breastfeeding.)

Those who began breastfeeding a few days after birth often fed their infants boiled sugar water or canned cow's milk in the interim (See Table 20.2). (Sample size for Table 20.2 is 69, i.e. all women who did not exclusively breastfeed in the first week of life.) Other foods reported were infant formula (4), boiled water (4), honey (1), and her neighbour's breast milk (1).

Of those women who did not exclusively breastfeed in the first six months of life, many fed their infants porridge (See Table 20.3). (Sample size for Table 20.3 is 61, i.e. all women who did not exclusively breastfeed after they began breastfeeding. Note that this table does not include data for feeding practices in the first few days of life, when the woman may not have been breastfeeding.)

Table 20.1, n=110

Exclusive breast feeding		
In the first week of life	41	37%
2nd week to 6th month of life	49	45%
In the first 6 months of life	16	15%
No response	1	1%

Table 20.2, n=69

What did you feed before breastfeeding?		
Boiled sugar water	56	81%
Canned cow's milk	16	23%
Other	9	13%

Table 20.3, n=61

What did you feed in the first 6 months in addition to breastmilk?		
Porridge	49	80%
infant formula	10	16%
canned cow's milk	9	15%
boiled water	3	5%
boiled sugar water	1	2%
no response	1	2%

21. Knowledge of where to find birth spacing products and information

Almost all women (98%) have heard of birth spacing, mostly from the radio (Table 21.1). Total exceeds 100% because some women gave more than one source. (Sample size for Table 21.1 is 110, i.e. all women who have heard of birth spacing.)

When asked where they could find birth spacing, only 4% could not give at least one source (See Table 21.2). However, 36% of the women who had heard of birth spacing were not aware that free birth spacing products are available at the health centre.

Table 21.1, n=110

Sources of birth spacing information		
Radio	87	79%
Private clinic/pharmacy	20	18%

Friends/neighbours	19	17%
Health centre	18	16%
Public hospital	12	11%
No response	1	1%

Table 21.2

Where can you find birth spacing?		
Health centre	71	65%
Private clinic/pharmacy	48	44%
Public hospital	33	30%
Do not know	4	4%

22. Birth spacing usage

The majority of married, non-pregnant women (79%, n=95) were not using birth spacing at the time of the interview. Of the eighteen women who reported using birth spacing (19%), nine took hormone pills, five received hormone injections, and four had undergone tubal ligation. Of the seventy-five married, non-pregnant women who were not using birth spacing, 34 (45%) said that they did not want more children. However, 30 women in the entire sample expressed an interest in using birth spacing, or said that they planned to get it.

Analysis and Discussion

Part A: Demographics

This survey collected data from 190 women in Okrasa and Pong Tak communes. Their mean age was 30.1, with a range of 18 to 50 years. Almost all women were married (95%). One quarter of woman lived in brick (26%) or thatch (26%) homes, while almost half lived in wood homes raised on stilts (46%). From the researcher's personal observation in the Okrasa commune, however, there did not appear to be a large income disparity between most of the households. A few women living near the main roads were noticeably wealthier and were more likely to have brick homes, but the majority of women within the village appeared to live at a similar subsistence level, whether their house was wood, thatch, brick, or some combination of these. Almost all women interviewed did not have electricity, running water, or a latrine. A very small percentage were observed to have a television set, tile floors, or other signs of relative wealth. A comprehensive poverty assessment would give a better picture of socioeconomic status than home type alone, but it is clear that most women in the survey are relatively poor.

The mean educational level is 4.1 years. Almost half (42%) of women have less than four years of education and thus are likely functionally illiterate. The majority of women (80%) are not educated past primary school and are likely to read at a very basic level. These results show an approximate literacy rate of 57% (i.e, women with 4 years of education or more), closely corresponding with the national average of 58% female adult literacy.⁴

Mean number of children per woman is 3.1. Mean number of children for women older than 35 is 5.1, higher than the national total fertility rate of 4.1.⁴ However, young women may have fewer children in their lifetime than the previous generation, so it is not possible to extrapolate the mean of 5.1 to all women in Kep. The mean age of the youngest child is 28.7 months, and 6% of women were pregnant at the time of the interview.

This survey does not provide the data necessary to calculate infant mortality rates, but it does show numbers of losses, and the proportions of losses categorized by age at death. Fifty-eight losses were experienced during gestation or in the first five years of life, or 3.0 losses per 10 women. Half (48%) of all losses, including miscarriages, stillbirths, and infant and child mortality, occurred in the first year of life. More than one quarter (27%) occurred in the neonatal period (birth to 30 days post-partem). Other significant risk periods were 0-21 weeks gestation (21% of losses) and the postneonatal period of 31 days post-partem to one year (also 21%). In fact, a large percentage of the women (21%) reported at least one loss during pregnancy and/or after giving birth.

When the data is separated to include only losses of infants or children after a live birth, the women reported 36 deaths, or 1.9 deaths per 10 women. Of the 632 live births experienced by the women in this sample, 5.70% ended in death by the age of five (i.e., 57.0 deaths/1,000 live births), and 2.69% ended in death within 30 days of birth (i.e., 26.9 deaths/1,000 live births). However, these rates cannot be equated with infant mortality rates because the time frame of the deaths is unknown. For comparison, the national under 5 mortality rate is 115 deaths/1,000 live births, and neonatal mortality is 35.7 deaths/1,000 live births.⁴

Nine women in this survey reported having at least one therapeutic abortion. Eight women received TAs from private health care workers, whose level of training is unknown. One woman had a TA performed by a TBA at twenty weeks gestation by

means of blunt trauma to her abdomen, undoubtedly a very dangerous procedure. The abortion rate found in this survey, 5%, is somewhat lower than the rate of 8.1% found in a survey of 600 women in the Kratie province.⁶

Part B: Antenatal Health-Seeking Behaviour

Most women in the survey do not access the health centre or hospital for sick care. Only 23% of women said that they would consult the health centre if they or their child was sick, and almost half (46%) have never been to the health centre. Although the rates seem low, it must be remembered that the health centres opened only five years prior to the study. Private health care, the only service available in the near past, is still more popular for sick care (62% said they would consult a private clinic), and traditional home remedies are ubiquitous. Unregulated and often inappropriate private health care provision is particularly troubling in infants. The tendency to treat infants with medications bought in the market, without informed choice of dosage or type, is a dangerous practice that contributes to the high rate of postneonatal mortality (death between one month and one year) in Cambodia.⁴ While all childhood mortality rates are declining in Cambodia, postneonatal mortality has increased in the period between 1993-1998 from 34 to 54 deaths/1,000 live births.⁴ Although these problems are not new, inappropriate treatment of infectious diseases and the widespread lack of exclusive breastfeeding are two possible explanations.

When asked where they received care and advice in their last pregnancy, half of women (55%) reported friends, family and/or neighbours as sources. One third cited public hospital staff (35%), 22% cited health centre staff, and few credited a TBA (7%). Only 39% percent reported consulting more than one source. Interestingly, another 22% said that no one gave them care and advice in their last pregnancy.

When asked specifically about antenatal care, 48% of women reported getting a pregnancy check-up at the hospital or health centre. Women appeared to greatly prefer the hospital (64 respondents) over the health centre (28 respondents). According to the Minimum Package of Activities as defined by the MoH, comprehensive antenatal care with appropriate referral should be available at the health centres.⁷ However, access to care at the health centre has improved since 1998, when nationally only 5% of pregnant women attended at least one antenatal visit there.⁴ In this study, 15% of pregnant women reported getting a pregnancy check-up at the health centre. Again, the fact that the health

centres are relatively new may contribute to their lower useage. Of the women who did not access the public system, 17 (9%) got a check-up in a private clinic, and 880 (42%) had no check-up.

The MoH has sought to increase access to care with additional polices. The *Guidelines for Outreach Services from Health Centre* states that antenatal clinics should be performed by the health centre midwife in the community twice a month (March 2001). This is currently not taking place due to lack of remuneration of health centre staff for the time and expense involved.

According to this survey, almost half of women received antenatal care from a trained provider, significantly higher than the national average of 38%.⁸ Although this hopefully reflects improved access to care, it may in fact represent sick care more than preventative care. Women were not asked whether their pregnancy care visits were part of a regular well mother check-up, or whether they went to the doctor only because they were sick in their pregnancy. Reports of sick care visits likely inflate the results somewhat.

Women who accessed antenatal care made on average 2.4 visits and the mean month of first visit was 5.4 months gestation. Two visits are probably inadequate, and women should be seeking care earlier in pregnancy.⁷

When asked how they would travel to the health centre normally, 37% said that they would bicycle. About one quarter said they would take a motodup (26%) or walk (21%). Time to travel ranged from 1 minute to 80 minutes, with almost half of respondents reporting a travel time of 15-29 minutes (42%) and one quarter reporting 30-44 minutes of travel time (24%). In an emergency, most women said they would use a motodup (59%) or their own moto (24%) to get to the health centre. Half of all respondents (52%) reported that they could get to the health centre within 15 minutes in an emergency, and 87% said that travel time would take less than half an hour. However, these travel times are unrealistically short. They consider only the actual travel time in ideal conditions. In addition, they are rough approximations made by villagers who often do not wear a watch. Other factors could greatly hinder transportation include weather conditions such as flooding, and the high cost to rent a moto or moto-remorque (moto with trailer). One of the most difficult problems, according to another study in the same region, is the time it takes to find a motodup and especially moto-remorque (moto with

trailer).⁹ A woman with a problem in labour would need a moto-remorque to get to a hospital. Virtually no villagers have telephones and there are only a handful of moto-remoques in the area, so it could easily take several hours to find a driver.⁹ In terms of antenatal care, however, community clinics as per MoH guidelines would reduce transportation barriers considerably.

Part C: Childbirth Birth Experience

Most women (82%) reported home births, either with a TBA (69%) or a private HCW (13%). Twelve percent gave birth in a private clinic. Only 6% gave birth in a public facility, and none of these were in the health centre. Instead, many women in Okrasa employed the same midwife who works at the health centre as a private birth attendant, either by going to her home or having her come to their home. By commune, 78% of women interviewed in Okrasa and 55% of women interviewed in Pong Tak gave birth at home with a traditional birth attendant. More women in Pong Tak (34%) accessed private care, whether at home or in a clinic, than in Okrasa (19%).

If one assumes that only the current health centre midwives were employed as private HCWs for these deliveries, the rates are the opposite of what might be expected; the health centre midwife in Okrasa has more experience (3 years) than the midwife in Pong Tak (6 months) and seems to more well-known in the community. However, numerous other private HCWs unknown to the researchers (with unknown qualifications) were likely to have been employed. In addition, other factors may be influencing women's choices, such as socio-economic status and access to transportation. Of the 24 women in Pong Tak who used private services, reasons cited include better skill and safety (13), convenience/service (6), reputation/popularity (5), and low cost (5). The 23 women in Okrasa reported better skill and safety (10), reputation/popularity (8), and extra precaution for first child (5) as reasons to use private services.

Rate of home births are somewhat lower in Kep than across the country. National rates are reported as medical (does this include private practice?) versus non-medical place of delivery. The vast majority of women in Cambodia (90.3%) deliver in a non-medical setting, usually their own home (NHS, 1998). Delivery in a non-medical setting becomes more likely with decreasing number of antenatal visits, decreasing education, and increasing poverty (NHS, 1998). Women younger than 20 are more likely to give

birth in a medical facility (15%) than women 35 years of age and older (7%), consistent with a general improving trend of better health-seeking behaviour (NHS, 1998). Place of residence is also correlated with choice of delivery location. While almost all babies across the country are born at home, 70% of those born in the capital city, Phnom Penh, are born in a medical facility (NHS, 1998).

Average cost of giving birth at home with a TBA (16,000 riels, 4USD) was considerably less than birthing at the hospital (119,000 riels, 29.75USD) or private clinic (175,000 riels, 43.75USD), or employing a private HCW at home (87,000 riels, 21.75USD). Most women (67%) who gave birth at home with a TBA also paid in kind with products such as rice, hens, or fruit, while few women who gave birth with a private or public health care worker did so. The new fee schedule for the hospitals and health centres, introduced about six months before the survey was administered, stipulates that a delivery should cost only 35,000 riels (8.75 USD), a much lower fee than has been reported in this study of births in the past five years. Since almost half of women who gave birth at home with a TBA gave affordability as a reason for their choice, many women are likely unaware of the new fee schedule. This reflects a general lack of knowledge and much misinformation observed by the researcher about antenatal, interpartum, and post partem services, birth spacing, sick care, and set user fees.

Some of the reasons women gave for their choice of delivery location and birth attendant have already been discussed. The most common reason given by women who gave birth at home with a TBA, however, is that they were healthy and/or had not had a problem giving birth at home previously (46%). About one third cited habit or custom (30%). Notably, 36% gave habit/custom and/or being healthy as their only reasons for their choice of birth place and caregiver, indicating that they saw home birth with a TBA as normal. Poverty or low cost of home birth were reported by 43% of women. Five women (4%) planned to give birth at a private clinic or public hospital but said they did not have time to get there, or they began labour at night. This indicates several problems. First, transportation, especially when a woman cannot ride a moto, is a barrier for most villagers. Second, the hospital and health centre do not have reliable service after hours. Third, a woman may not know at what point in her labour she should leave for the hospital and thus may wait too long.

Women who gave birth at home with a private midwife had slightly different reasons for their choice. Women most commonly cited the ability of their family to care for them or their children (67%), being healthy (38%), and having no money (29%) as reasons to stay at home. Women chose the private midwife to attend the birth because they considered her “good,” more skilled, or safer than a TBA (42%), and/or she had a good reputation or was popular with other women (29%).

As previously mentioned, skill and safety (65%) were the most commonly cited reasons of women who gave birth in a private clinic, followed by convenience and service (30%), and a good reputation/popularity (26%). Many women commented on the convenience of giving birth at the private clinic, especially being served “three meals a day,” while they would be required to provide their own bedding and food if they delivered in the hospital. The women gave no indication that they valued a hospital birth over a birth in a private clinic; their first choice seemed to be the private clinic. This is not surprising, given the generally poor level of confidence in the public system as gathered by informal observations and discussions in the village.

Only eleven women (6%) gave birth in a public hospital. All but one woman gave reasons relating to safety, confidence in the staff, or taking extra precautions as reasons for their choice. Two women said that it was their custom. One of the women had not planned to give birth at the hospital but was sent there by the private HCW in attendance at her home when the delivery became too difficult.

One third of women (31%) were worried about a difficult or dangerous delivery, and 12% worried that they would die giving birth. It is notable that although such a large percentage of women are worried about negative outcomes in delivery, 51% did not receive any antenatal care in their last pregnancy, and 69% gave birth at home with a TBA, indicating a gap in access to care. Many women think they are healthy enough to give birth at home with a TBA, but if they do develop a problem, they are often so remote that it is impossible to find timely aid. In addition, TBAs and untrained HCWs may be unable to accurately judge the severity of a problem and refer appropriately.

Almost one quarter of women (23%) reported bleeding “a lot” after giving birth. Fatigue and vertigo were common related complaints. Although difficult to assess in the absence of medical records, these results seem to indicate that post-partem hemorrhage is a common problem in Kep.

In 1998, maternal mortality rate was determined to be 473 deaths per 100,000 live births (NHS). However, this survey elicited very few reports of maternal deaths. In fact, none were reported to occur in the five years prior to the study. It is unclear whether these results are accurate or whether they reflect the reticence that women showed to talk about maternal death. A better estimate of maternal mortality might be obtained by employing the sisterhood method in another survey.¹⁰

Part D: Breastfeeding and Birth Spacing Knowledge and Practice

Only 15% of women reported exclusive breastfeeding in the first 6 months of their youngest child's life, consistent with a nation-wide rate of 15.6% exclusive breastfeeding in the first 3 months.⁴ Within those six months, 37% breastfed exclusively in the first week of life, and almost half (45%) breastfed exclusively after the first week. Unsafe breastfeeding practices are common among the women. Most women do not begin to breastfeed their babies immediately. Instead, they give boiled sugar water or canned cow's milk to the infant in the first one to three days of life. Several negative effects arise from this practice. First, the infant is robbed of the colostrum, the immunologically rich milk the mother produces only in the first few days after birth. Second, the infant is unnecessarily exposed to foods that are nutritionally inferior and may be contaminated with bacteria. Third, late onset breastfeeding makes it more difficult for the mother to produce enough milk to support the baby. Once they begin breastfeeding, many women do not breastfeed exclusively. Women who reported feeding other foods most often mentioned porridge (80%). A few gave infant formula (16%) or canned cow's milk (15%).

Most women heard about birth spacing on the radio (79%). Other sources of information about birth spacing included private clinics or pharmacies (18%), friends or neighbours (17%), the health centre (16%), or the public hospital (11%). When asked where they could find birth spacing, only 4% could not give at least one source. Most mentioned the health centre (65%), followed by the private clinic or pharmacy (44%) or public hospital (30%) as sources of birth spacing. However, 36% of the women who had heard of birth spacing were not aware that free birth spacing products are available at the health centre, again reflecting the unfamiliarity that women have with the health care system.

Usage rates of modern birth spacing methods in this survey (19%) are higher than the national average of 11%.⁸ Hormone pills were most popular (9) followed by hormone injections (5) and tubal ligation (4). None used condoms. Anecdotally, most of the women had never seen a condom, and some believed that condoms are contaminated with AIDS. The majority of married, non-pregnant women (79%) were not using birth spacing at the time of the interview. More importantly, of the seventy-five married, non-pregnant women who were not using birth spacing, 34 (45%) said that they did not want more children. However, 30 women in the entire sample expressed an interest in using birth spacing, or said that they planned to get it.

Limitations of the Data

The sample was not randomly selected and included only two of the three health centre catchment areas in Kep, so care should be taken when generalizing results to the Kep Operational District. Women who were known to the Red Cross volunteers or the health centre staff may have been more likely to be sampled, while women who were away from their homes when the interviewers arrived could not be sampled. Missing data is another limitation. Most questions are not missing more than one or two responses, however.

The method of data collection introduces some limitations. First, the questionnaire was developed and printed in English, but delivered in Khmer. Although care was taken to ensure the translator was involved in the development process and was comfortable with the material, miscommunication was still possible at all stages. Second, the data were collected in different ways by interviewers: one by the field researcher in a logbook, and one by the translator on copies of the questionnaire. Although the questions were standardized and most were quantitative, reducing the possibility of differences between the two data collectors, each interviewer may have used different prompts to clarify answers.

The questions themselves may have introduced limitations. When asked if they knew anyone who died in childbirth, some women were reticent to answer because of cultural taboos that preclude discussion of death, particularly if they were pregnant at the time of the interview. There may also have been a misunderstanding of terms, despite the translator's best attempts to be clear and define when needed. For example, some women

used the same word to describe health centre, hospital, and private clinic, and had to be probed to explain what they meant. As previously discussed, women may also have equated sick care during pregnancy with well pregnancy check-ups, artificially inflating the results.

Recommendations

- Support the health centre midwives to regularly perform antenatal clinics in the villages as per MoH Guidelines for Outreach Services from Health Centre (published March 2001) The primary goal of these clinics should be to improve access to care, however, they should also seek to:
 - Educate women about the value of antenatal care with a trained HCW, and when/how often they should seek care.
 - Educate women about the value of delivery with a trained HCW.
 - Educate women about the importance of post-partum and newborn care.
 - Improve knowledge in the community of the health centre services that are available, especially in regards to maternal care.

- Perform a comprehensive maternal health KAP survey. However, several recommendations can be taken from the results of this preliminary study:
 - Educate women about healthy breastfeeding practices. Most importantly, encourage immediate and exclusive breastfeeding in the first six months.
 - Educate women about modern birth spacing methods. Women already know these methods exist and at least one place to find them, but most have never seen them or have misconceptions about them. The demand for birth spacing appears to be much higher than current usage, so access to birth spacing products should be a priority.

1. What village do you live in? _____
2. What type of house do you live in? 1. Mud 2. Thatch 3. Wood 4. Brick
3. How old are you? _____
4. What is your marital status? 1. Married 2. Divorced /Separated 3. Widowed 4. Single
5. Have you been to school? Yes / No If yes, how many years have you attended school? _____
6. How many children do you have? _____ What is the age of your youngest child? _____
7. Have you lost any children after birth? Yes / No Have you had any miscarriages? Yes / No
Have you had any abortions? Yes / No If so, how many? 1 2 3 4 At what month? ____
At what age? _____ How did you lose your child?

Part B: Health-seeking Behaviour

8. What do you do if you or your child are sick?

1. Health centre
2. Public hospital
3. Private clinic/pharmacy
4. Traditional home remedies
5. Traditional healer
6. Other (specify)

Have you ever been to the district health centre? Yes / No

9. During your last pregnancy, where did you seek care or advice for your health in pregnancy and delivery?

- | | |
|--------------------------|--|
| 1. TBA | 4. Private medical practitioner/pharmacist |
| 2. HC midwife | 5. Family/friends/neighbours |
| 3. Public hospital staff | 6. Nobody |

10. During your last pregnancy, did you visit the district health centre or hospital for a pregnancy check-up?

HC / Hospital / Did not visit

If yes, at what stages in pregnancy? 1 2 3 4 5 6 7 8 9 (months)

11. How do you normally get to the health centre? How long does it take?

- | | |
|------------------|--------------------------|
| 1. Walk _____ | 4. Moto _____ |
| 2. Bicycle _____ | 5. Other (specify) _____ |
| 3. Motodup _____ | _____ |

12. How would you get to the health centre in the case of an emergency? How long would it take?

- | | |
|------------------|--------------------------|
| 1. Walk _____ | 4. Moto _____ |
| 2. Bicycle _____ | 5. Other (specify) _____ |
| 3. Motodup _____ | _____ |

Part C: Most Recent Birth Experience

13. Where did you give birth to your youngest child?

- | | | | |
|---------|----------------|--------------------|-------------------|
| 1. Home | 2. District HC | 3. Public Hospital | 4. Private clinic |
|---------|----------------|--------------------|-------------------|

14. Who attended the birth?

- | | | | |
|--------|------------------------|--------------------------|------------------------------|
| 1. TBA | 2. Health Centre staff | 3. Public hospital staff | 4. Private healthcare worker |
|--------|------------------------|--------------------------|------------------------------|

15. What were your reasons for your choice of birthplace and caregiver? (Circle all that apply, add comments)

- | | |
|------------------------------|--|
| 1. Habit/custom | 3. I have never had a problem before |
| 2. I was healthy/no problems | 4. So family could take care of me/my children |

5. No money/too poor

More comments:

16. How much did you pay for the delivery? _____ Did you also pay in goods? Yes / No

17. Did you have any problems with your pregnancy?

1. no problem 2. specify:

Did you have any problems with your delivery?

1. no problem 2. specify:

Did you bleed a lot after giving birth? Yes / No Bleeding complications: _____

18. What were you worried about during your pregnancy?

19. Do you know any women who died in childbirth? Yes / No

What are their names, and where did they live? _____

Part D: Breastfeeding and Birth-Spacing Knowledge and Practices

20. When did you begin to breastfeed your youngest child? _____

What did you feed the baby until you started breastfeeding? (if water, specify if boiled) _____

Did you feed the baby other things besides breastmilk before 6 months? Yes/No Circle all that apply:

- | | | | |
|-----------------------|----------------------|-----------------|---------------------|
| 1. Fresh cow's milk | 4. Non-B sugar water | 7. Honey | 10. Infant formula |
| 2. Canned cow's milk | 5. Boiled water | 8. Coconut milk | 11. Other (specify) |
| 3. Boiled sugar water | 6. Non-boiled water | 9. Porridge | |

When did you (or when do you plan to) stop breastfeeding? _____

21. Have you heard of birth spacing? Yes / No Where did you hear about it? _____

Where can you get birth spacing? _____

Did you know that you can get free birth spacing at the Health Centre? Yes / No

Do you use birth spacing? Yes / No

If yes, which type?

1. Pill
2. Injection
3. Condom
4. IUD
5. Surgery to tie fallopian tubes
6. Other _____

Do you want more children? Yes / No

ADDITIONAL COMMENTS:

Kep Maternal Health-Seeking Behaviour Survey, *Khmer language version*

Appendix B: Reasons given by women for their losses in pregnancy and childhood

Reasons given for spontaneous abortions:

- “My hammock fell.” (24 weeks gestation)
- “I was holding my other child on my hips and he pressed on my uterus.” (12 weeks gestation)
- “I carried water” (24 weeks gestation), and “I was nauseous, tired, and had many problems” (5 weeks gestation)
- “I was on IV, and the pole hit me.” (14 weeks gestation)
- “I worked too hard” (16 weeks gestation)
- “I reached up to grab fruit” (32 weeks gestation)
- “I don’t know why, but when I used the toilet I was bleeding and then I hurt inside.” (12 weeks gestation)
- “I don’t know why, but before my pregnancy I used the circle (IUD?) for birth spacing.” (12 weeks gestation)

Reasons given for infant and child mortality:

- “sick” (most common)
- tetanus (6)
- fever (2)
- disease in which “the white blood cells ate the red blood cells” at age 10
- burn by a fallen lamp at 4 months old
- drowning at age 3

Appendix C: Reasons given by women for their choice of birth place and caregiver

Delivery at home with a traditional birth attendant

- “I have a lot of children at home, so I need to stay home with them.”
- “The health centre used to be no good; they didn't have enough medicine, and the midwife was not always there.”
- “I didn't think it would be difficult to give birth at home. If I had a problem, I could go to the health centre.”
- “My husband would take me to the private clinic if there was a problem.”
- “Everyone else does it.”
- “I am afraid of getting an injection. I am afraid it will make me hurt. And I had my first child at home too.”
- “I wanted to go to the private clinic because I thought I would bleed a lot, but when I arrived, the midwife wasn't there.”
- “I'm too lazy to go to the health centre.”
- “My husband is an army nurse, so he can take care of me and give me the injection.”
- “My first child was born at Kep hospital, but now I'm not worried, so I gave birth at home.”
- “I was healthy; the midwife told me I could give birth at home.”
- “I don't want to leave the house with no one in it.”
- “The TBA can give me an injection.”
- “If I stay at home it's the same as the hospital.”

Delivery at home with a private health care worker

- “I can pay only a little money and it is easy to look after my children. Many people here give birth at home with private midwives.”
- “I planned to go to Kampot hospital because my baby had a big head, but I gave birth at night, so I called Sunnary (the midwife) because she can make injections.”
- “I would have to prepare my own bedding and food if I went to the hospital. I was afraid of the TBA because it was my first child, and she may not be able to help me if it is a dangerous delivery.”

Delivery at a private clinic with a private health care worker

- “I had high blood pressure so I wanted safety. I chose the private clinic because it offers better service than the hospital (cooking and cleaning) for nearly the same price.”
- “I wanted to get tubal ligation at the same time. Also the private clinic has better service; they will wash my clothes and feed me. I had my previous children at home because in the Pol Pot era and even 10-15 years ago, it was not safe enough to leave home to give birth.”
- “The midwife here knows about people's financial situation and adjusts her price to match. I gave birth at the clinic because the midwife would not come to my home at 5am.”
- “This midwife was recommended by my sister who lives near her clinic. It was my first child so I was worried. Prevention before cure!”

Appendix D: Maternal Mortality in Okrasa and Pong Tak

Three cases of maternal mortality were found in this survey. Only the following information is known:

- Three women died in childbirth in the Kep region
- The deaths occurred about 5-6 years ago.
- The womens' names are Bouy Maid, Meng, and Soveun
- All three women were reported to die of post partem hemmorrhage

Appendix E: Select Figures

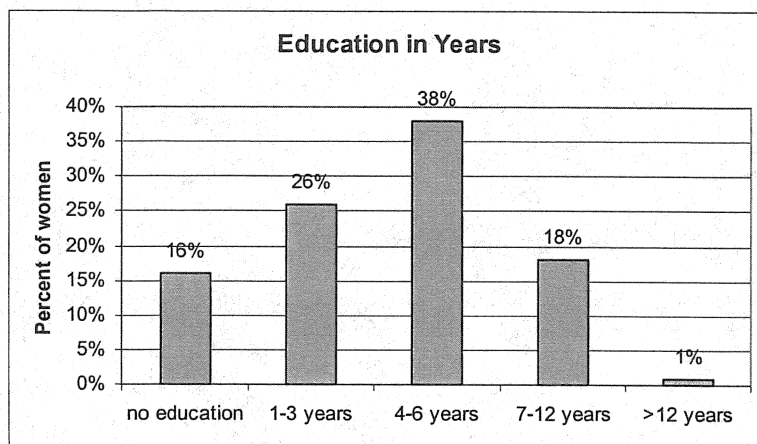


Figure 1: Education in Years

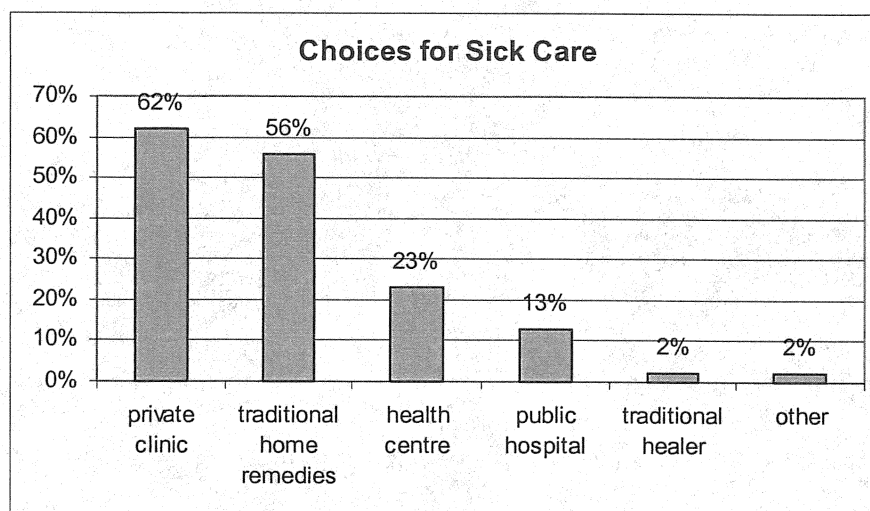


Figure 2: Choices for Sick Care

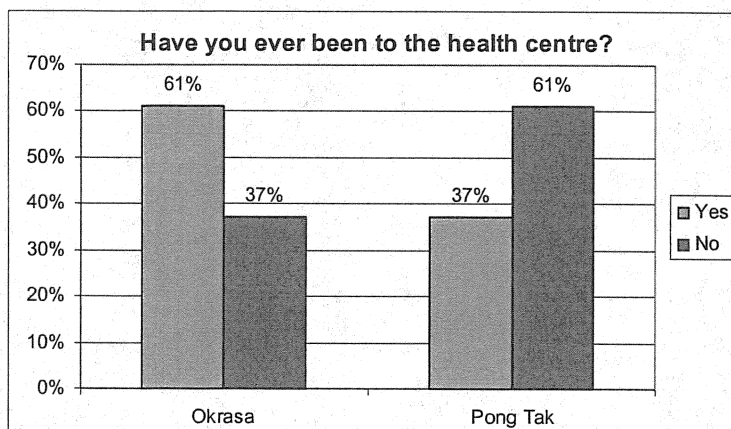


Figure 3: Percentage who have ever been to Health Centre

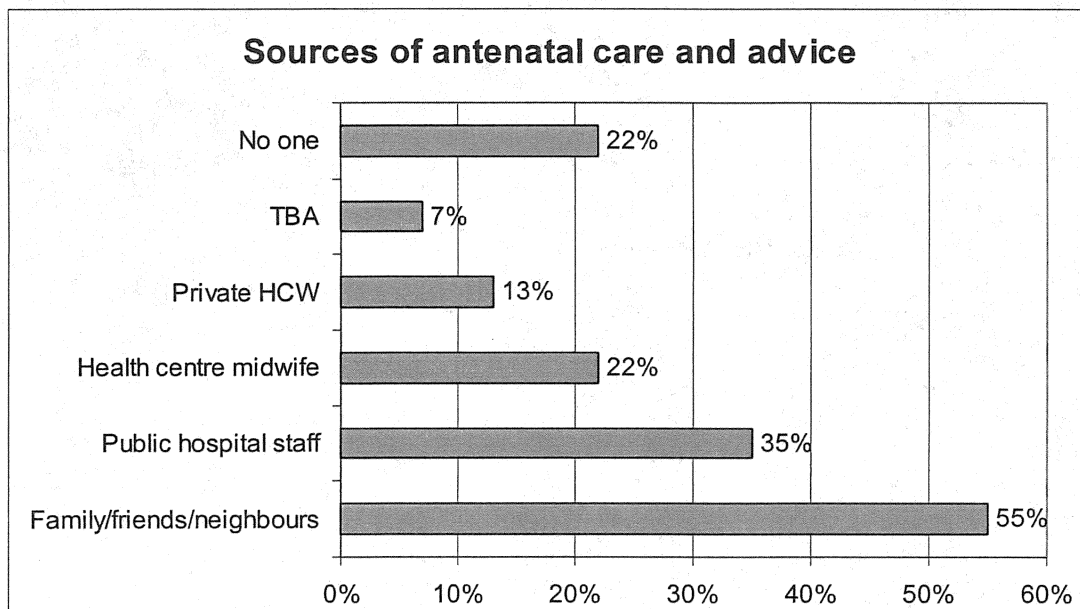


Figure 4: Sources of Antenatal Care and Advice

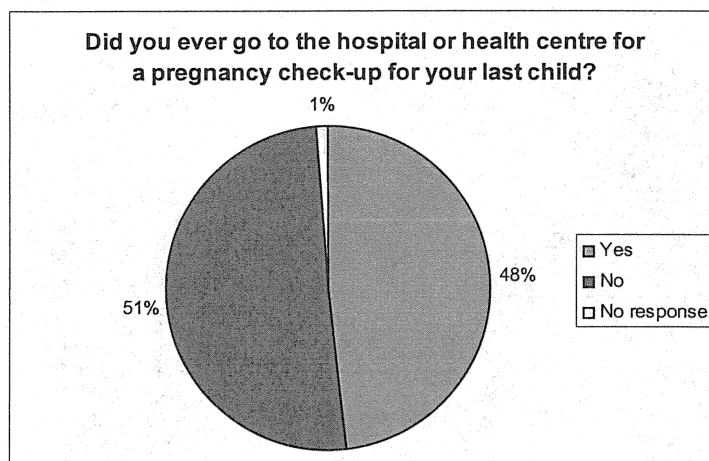


Figure 5: Percentage who have ever had Antenatal Care from a Trained Professional

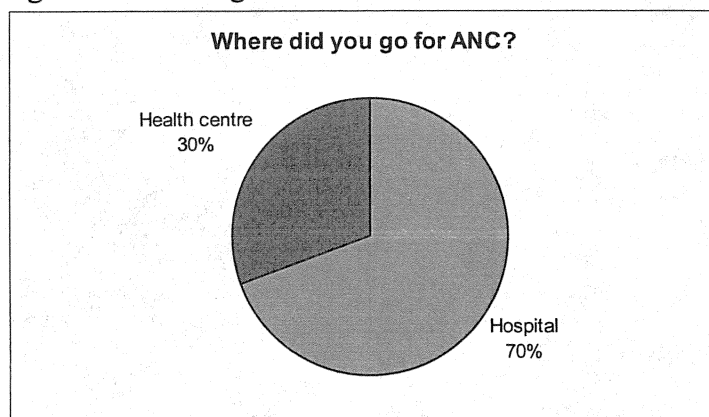


Figure 6: Location choice of Antenatal Care from a Trained Professional

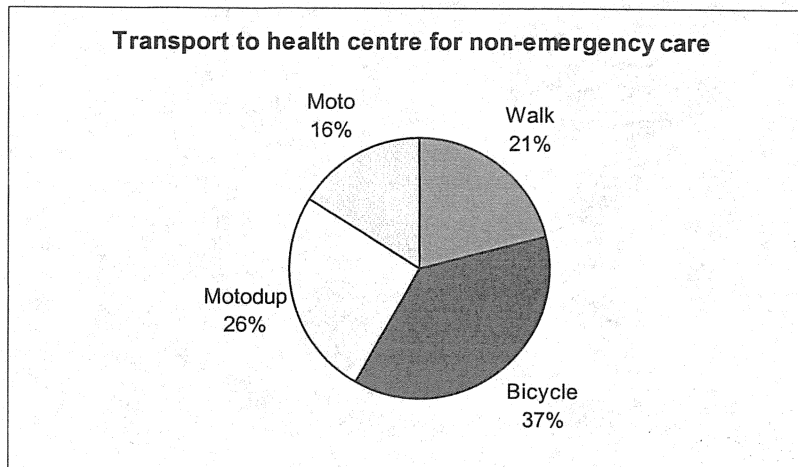


Figure 7: Transportation to the Health Centre for Non-Emergency Care

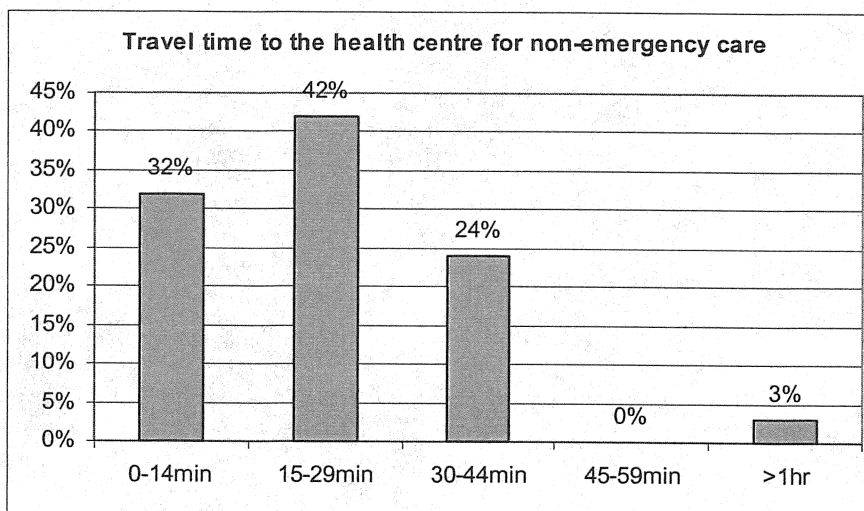


Figure 8: Travel Time to the Health Centre for Non-Emergency Care

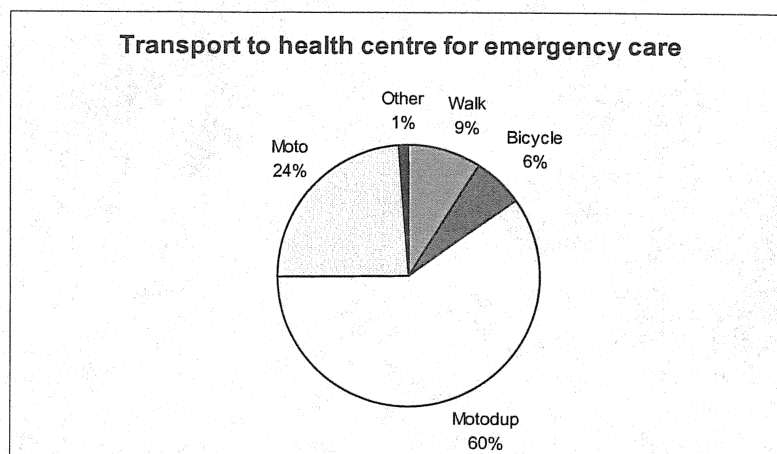


Figure 9: Transportation to the Health Centre for Emergency Care

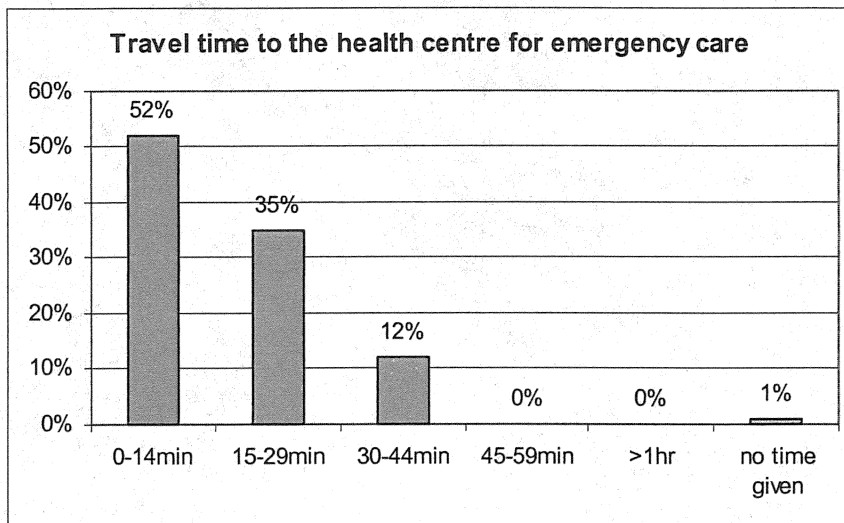


Figure 10: Travel Time to the Health Centre for Emergency Care

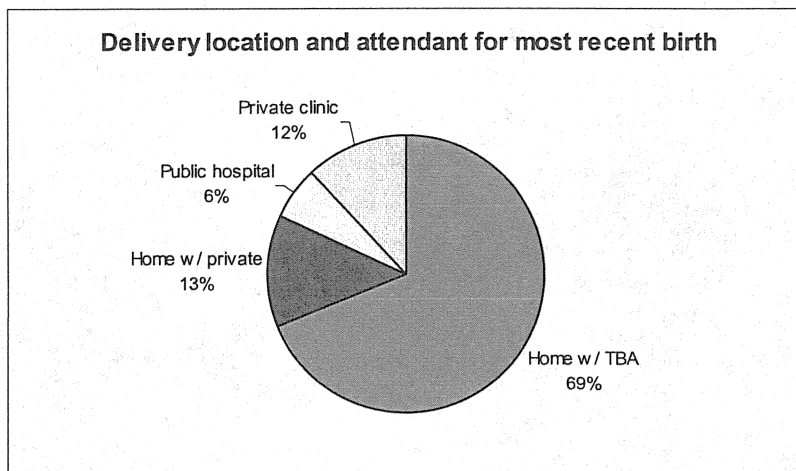


Figure 11: Delivery Location and Attendant for most recent birth

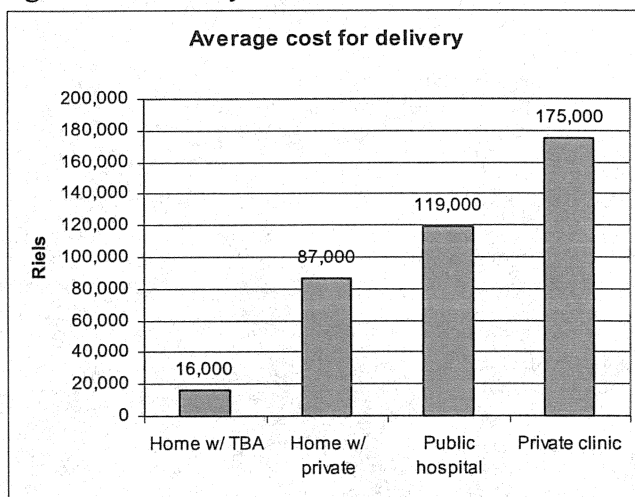


Figure 12: Average Cost for Delivery

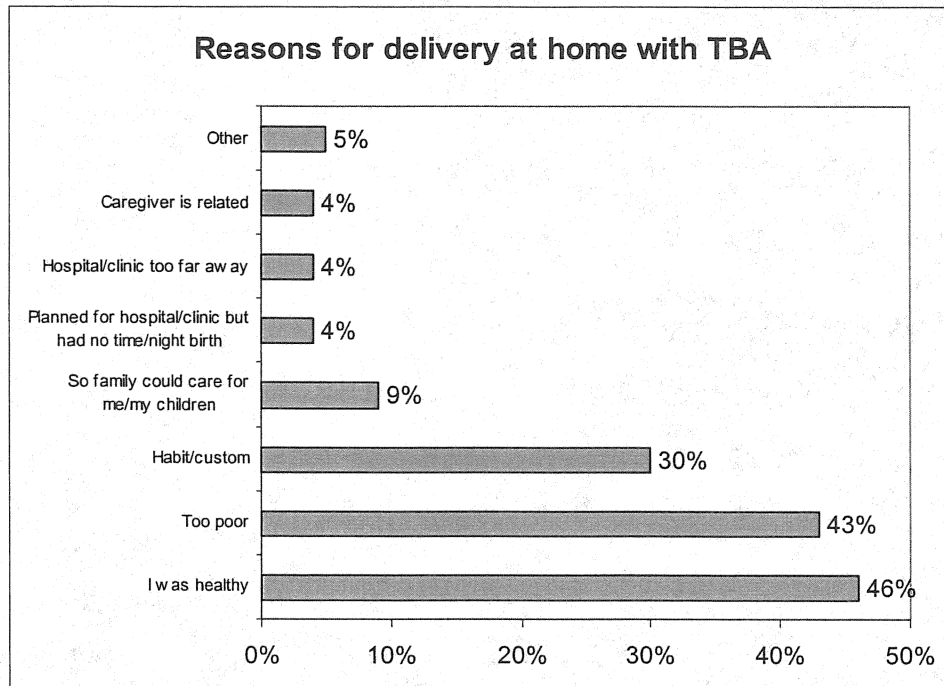


Figure 13: Reasons for Delivery at Home with TBA

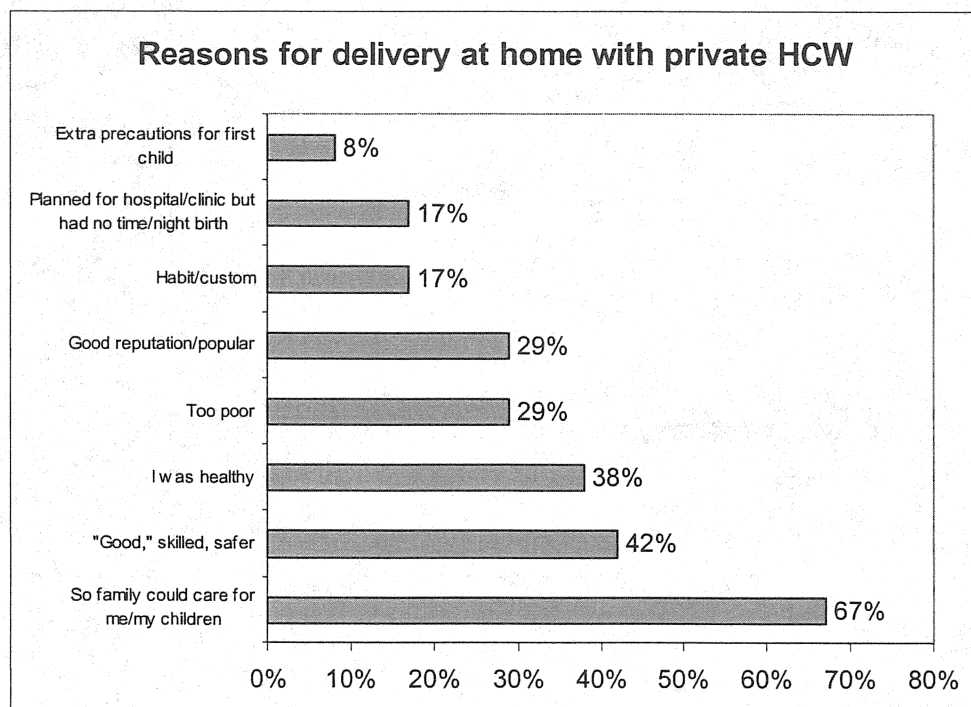


Figure 14: Reasons for Delivery at Home with Private HCW

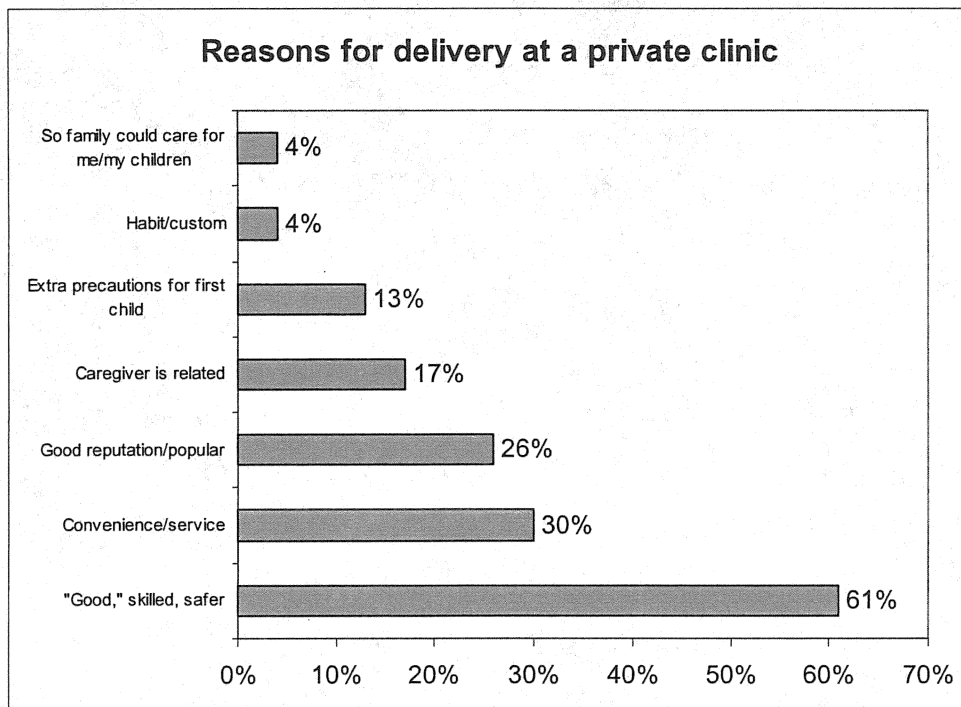


Figure 15: Reasons for Delivery at a Private Clinic

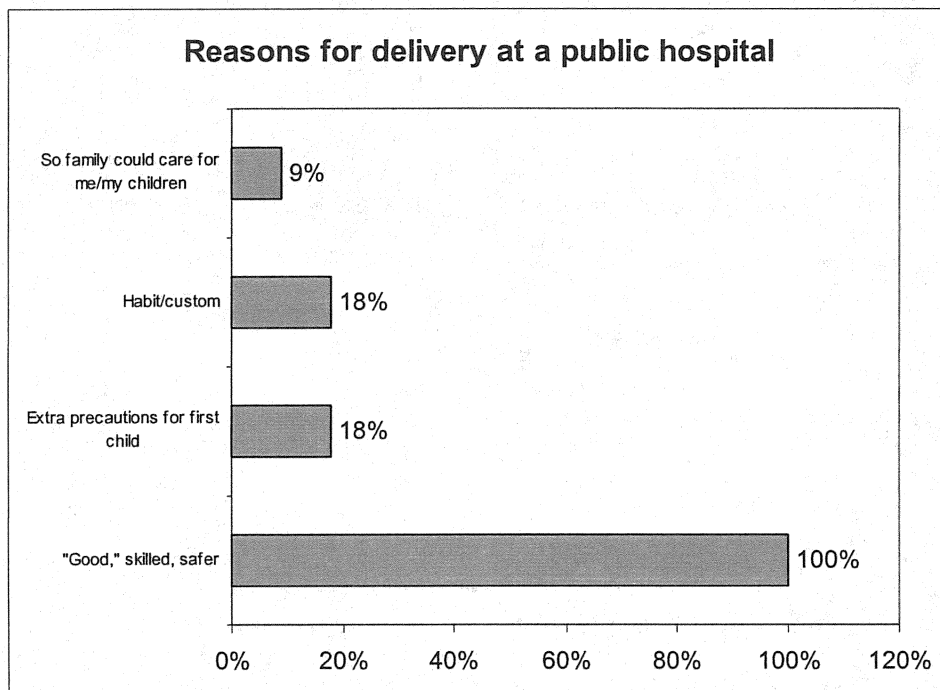


Figure 16: Reasons for Delivery at a Public Hospital

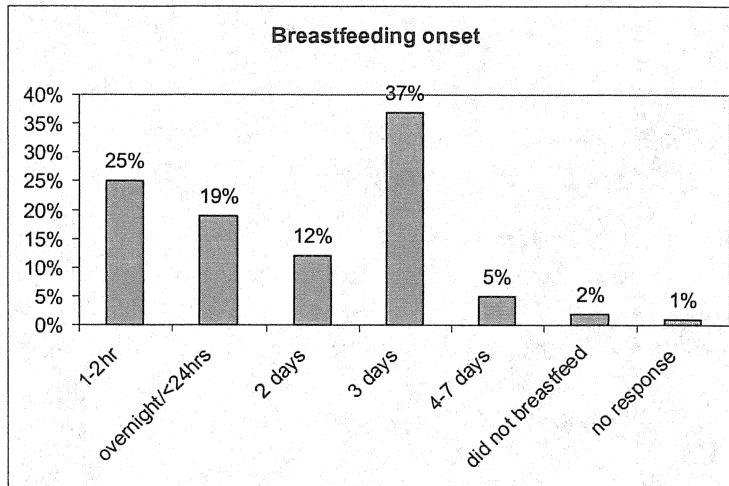


Figure 17: Time of Breastfeeding Onset

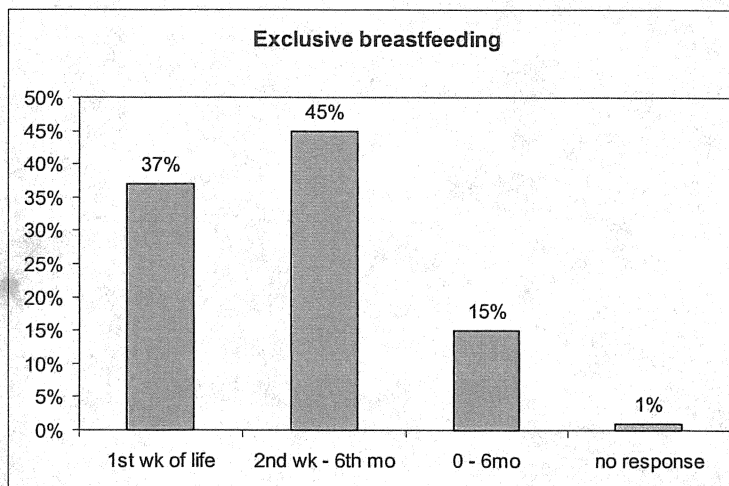


Figure 18: Percentage of Women who Exclusively Breastfed in the First Six Months.

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